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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,655	02/22/2002	James T. Daly	56326-039 (IOPL-118)	2087

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EXAMINER

LEE, SHUN K

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/081,655

Applicant(s)

DALY ET AL.

Examiner

Shun Lee

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/22/02, 8/14/02, IDS (4/02, 11/02).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 August 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The papers filed on 14 August 2002 (certificate of mailing dated 8 August 2002) have not been made part of the permanent records of the United States Patent and Trademark Office (Office) for this application (37 CFR 1.52(a)) because of damage from the United States Postal Service irradiation process. The above-identified papers, however, were not so damaged as to preclude the USPTO from making a legible copy of such papers. Therefore, the Office has made a copy of these papers, substituted them for the originals in the file, and stamped that copy:

COPY OF PAPERS ORIGINALLY FILED

If applicant wants to review the accuracy of the Office's copy of such papers, applicant may either inspect the application (37 CFR 1.14(d)) or may request a copy of the Office's records of such papers (*i.e.*, a copy of the copy made by the Office) from the Office of Public Records for the fee specified in 37 CFR 1.19(b)(4). Please do **not** call the Technology Center's Customer Service Center to inquiry about the completeness or accuracy of Office's copy of the above-identified papers, as the Technology Center's Customer Service Center will **not** be able to provide this service.

If applicant does not consider the Office's copy of such papers to be accurate, applicant must provide a copy of the above-identified papers (except for any U.S. or foreign patent documents submitted with the above-identified papers) with a statement that such copy is a complete and accurate copy of the originally submitted documents.

If applicant provides such a copy of the above-identified papers and statement within **THREE MONTHS** of the mail date of this Office action, the Office will add the original mailroom date and use the copy provided by applicant as the permanent Office record of the above-identified papers in place of the copy made by the Office. Otherwise, the Office's copy will be used as the permanent Office record of the above-identified papers (*i.e.*, the Office will use the copy of the above-identified papers made by the Office for examination and all other purposes). This three-month period is not extendable.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: t. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 43 and 44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 43 recites the limitation "a height of the cell defined between the end walls is relatively small compared to a width of the cell defined by the at least one side wall" and claim 44 recites the limitation "the width of the cell is at least twenty times greater than the height of the cell" which was not described in the specification.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-9, 11, 13-21, 23, 24, 26-28, and 30-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey (US 5,220,402) in view of Inman *et al.* (US 5,818,578).

In regard to claims **1, 4-9, 16, 17, 20, 21, 23, 24, 26, 33-37, 40, and 41**, Harvey discloses (Fig. 1) an absorption spectroscopy apparatus having a fluid inlet (24) and a fluid outlet (24) and comprising:

(a) a sample cell (10) including: at least one side wall (12a) having a reflective surface (e.g., a curved reflective surface) facing inwardly with respect to an axis of the sample cell (10) such that a beam of energy directed against a predetermined location on the reflective surface is reflected back and forth off the reflective surface and remains in substantially the same plane (*i.e.*, substantially perpendicular to the cell axis) while inside the sample cell (10) and at least one port (*i.e.*, inlet port 12d and outlet port 12e); and end walls (12b, 12c) closing opposing ends of the side and having substantially flat reflective surfaces (e.g., polished reflective surfaces; column 2, lines 14-20) facing inwardly with respect to the cell (10) and extending substantially normal with respect to the axis such that a beam of energy reflected back and forth off the reflective surface of the side wall (12a) and inside the sample cell (10) remains in substantially the same plane (*i.e.*,

substantially perpendicular to the cell axis; column 2, lines 33-37) while inside the cell (10).

While Harvey also discloses (column 1, lines 59-63) that the sample cell is for use with spectrophotometric equipment, the apparatus of Harvey lacks an explicit description that the spectrophotometric equipment comprises at least one polished source/detector reflector (*i.e.*, an intermediate reflector, a source reflector, and detector reflector) having a curved profile in a plane extending perpendicular to the axis of the cell (*i.e.*, segment of a cylinder), the reflector positioned with respect to the port of the cell to reflect energy through the port of the cell and against the predetermined location on the reflective surface of the side wall of the cell, a source for directing energy against the source reflector, and a detector for receiving energy from the detector reflector. However, spectrophotometric equipment is well known in the art. For example, Inman *et al.* teach (Fig. 4) that a sample cell (401) is coupled to spectrophotometric equipment comprising at least one source/detector reflector (source reflector 411, intermediate reflector 415, detector reflector 417) having a curved profile in a plane extending perpendicular to the axis of the cell, the reflector positioned with respect to the port of the cell to reflect energy through the port of the cell and against the predetermined location on the reflective surface of the side wall of the cell, a source (409) for directing energy against the source reflector (411), and a detector (410) for receiving energy from the detector reflector (417). Therefore it would have been obvious to one having ordinary skill in the art to provide spectrophotometric equipment comprising at least one source/detector reflector having a curved profile in a plane extending perpendicular to the axis of the

cell, a source, and a detector in the apparatus of Harvey, in order to reflect energy into and of the sample cell from the spectrophotometric equipment.

In regard to claim **2** (which is dependent on claim 1) and claim **27** (which is dependent on claim 23), Harvey also discloses (Fig. 1) that the reflective surface of the side wall (12a) of the cell (10) has a circular profile in a plane extending perpendicular to the axis of the cell (10) and extending parallel with the reflective surfaces of the end walls (12b, 12c) of the cell (10).

In regard to claim **3** (which is dependent on claim 1) and claim **28** (which is dependent on claim 23), the apparatus of Harvey lacks that the reflective surface of the side wall of the cell has a flat profile in a plane extending parallel to the axis of the cell. Harvey also discloses (column 2, lines 33-37) that the sample cell can be formed as a substantially coplanar device. Therefore it would have been obvious to one having ordinary skill in the art to provide a side wall reflective surface having a flat profile in a plane extending parallel to the axis of the cell in the apparatus of Harvey, in order to obtain a substantially coplanar device.

In regard to claim **11** which is dependent on claim 7, Harvey also discloses (Fig. 1) that the end walls (12b, 12c) include the fluid inlet (24) and the fluid outlet (24) of the apparatus.

In regard to claim **13** (which is dependent on claim 1) and claim **30** (which is dependent on claim 23), Harvey also discloses (column 2, lines 14-20) that the reflective surface of the side wall is polished.

In regard to claim **14** (which is dependent on claim 1) and claim **31** (which is dependent on claim 23), Harvey also discloses (Figs. 1 and 2) a light transmissive window (28) positioned within the port (12d, 12e) of the side wall (12a).

In regard to claims **15** and **18** (which are dependent on claim 1), claim **32** (which is dependent on claim 23), and claim **38** (which is dependent on claim 34), the apparatus of Harvey lacks that the cell has a height measured in a direction parallel to the axis substantially equal to a source length, and that the port of the side wall of the cell comprises a single inlet/outlet port, and the source/detector reflector comprises a single source/detector reflector. Inman *et al.* teach (column 2, lines 39-65) that it is desirable for certain applications to minimize the cell size. Therefore it would have been obvious to one having ordinary skill in the art to provide a single inlet/outlet port and to minimize cell height to the source length in the apparatus of Harvey, in order to obtain a small cell size.

In regard to claim **19** (which is dependent on claim 1) and claim **39** (which is dependent on claim 34), Harvey also discloses (column 1, lines 23-30) a spectrophotometer using infrared energy. An infrared source is inherent as a source for the infrared energy.

9. Claims 10, 12, 22, 25, 29, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey (US 5,220,402) in view of Inman *et al.* (US 5,818,578) as applied to claims 1, 7, 23, and 34 above, and further in view of Uno *et al.* (US 5,726,752).

In regard to claim **10** (which is dependent on claim 7), claim **12** (which is dependent on claim 1), claim **22** (which is dependent on claim 1), claim **25** (which is dependent on claim 23), claim **29** (which is dependent on claim 23), and claim **42** (which is dependent on claim 34), the modified apparatus of Harvey lacks that the end or side walls or the source/detector reflector are molded. Uno *et al.* teach (column 9, lines 17-28) to mold walls and reflectors in order to efficiently manufacture with low cost. Therefore it would have been obvious to one having ordinary skill in the art to mold walls and reflectors in the modified apparatus of Harvey, in order to efficiently manufacture with low cost.

10. Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harvey (US 5,220,402) in view of Inman *et al.* (US 5,818,578) as applied to claim 23 above, and further in view of Bien *et al.* (US 5,485,276).

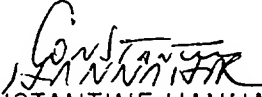
In regard to claims **43** and **44** which are dependent on claim 23, the modified apparatus of Harvey lacks that a height of the cell defined between the end walls is relatively small (e.g., at least twenty times smaller) compared to a width of the cell defined by the at least one side wall. Bien *et al.* teach (column 4, lines 1-46) to minimize the cell height in order to obtain accurate measurements. Therefore it would have been obvious to one having ordinary skill in the art to provide a small cell height (e.g., at least twenty times smaller than the cell width) in the modified apparatus of Harvey, in order to obtain accurate measurements.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (703) 308-4860. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703) 308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


CONSTANTINE HANNAHER
PRIMARY EXAMINER
GROUP ART UNIT 2878

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September 3, 2003